HISTORICAL SUMMARY OF AIDS TO NAVIGATION ANALYSES

APPENDIX A:

INDEXED REFERENCE LIST FOR THE ANNOTATED BIBLIOGRAPHY OF REVIEWED AIDS TO NAVIGATION ANALYSES

The following studies, analyses, and papers have been reviewed as part of the historical summary of aids to navigation analyses. An annotated bibliography for these references is included in Appendix B. In order to develop a chronological perspective of the historical development of these analyses, they have been arranged in chronological order by year of publication. The index is of the form YY-L-# where YY is the year of publication, L is the first letter of the first author's last name, and # is the sequential number appearing under that year and letter. An alphabetical list of references is included in the main portion of this report. Each reference in that listing for which an entry is included in the annotated bibliography is cross-referenced to this index number.

- 67-U-1 US Coast Guard, *Issue Paper--Coast Guard Buoy Tender Utilization*, Office of Operations Plans and Programs Staff, Washington, DC, 1967.
- 69-G-1 Gathy, B. S., and Danahay, P. J. A Study of the Western Rivers Aids to Navigation System, USCG Academy, New London, CT, December 1969.
- 69-G-2 Geonautics, Inc., Study of Maritime Aids to Navigation in the Short Distance Maritime Environment, Falls Church, VA, 1969. (Contract DOT-CG-83291-A)
- 70-B-1 Booz . Allen Applied Research Inc., *Evaluation of Plastic Versus Steel for Buoy Hulls*, Washington, DC, January 1970.
- 70-B-2 Booz . Allen Applied Research Inc., *Evaluation of Minor Marine Structures Versus Buoys*, Washington, DC, May 1970.
- 70-B-3 Booz . Allen Applied Research Inc., *Servicing Systems for Short-Range Aids to Navigation*, Washington, DC, November 1970.
- 71-C-1 Cohen, A., Steinberg, H. and Schofer, R., *An Initial Investigation of Economic Benefits of Maritime Aids of Short Range Navigation in Ports and Waterways*, National Bureau of Standards Report 10532, Washington, DC, 1971.
- 71-C-2 Coyle, J. B., Personnel Considerations for the Coast Guard's Aids to Navigation Program, Aids to Navigation Division (OAN), USCG Headquarters, Washington, DC, 1971.
- 72-B-1 Bates, R., *Channel Lighted Buoy Model,* Field Testing and Development Center, Baltimore, MD, March 1972. (Report No. 529).

- 72-M-1 McIntosh, J. A., Follow-the-Wire Marine Aid to Navigation System: Report on an Initial Demonstration Installation, Commandant(DAS), USCG Headquarters, Washington, DC, May 1972.
- 72-U-1 US Coast Guard, Analysis to Define Present and Future Requirements for Inland Construction Tenders, Aids to Navigation Division (WAN-5), Washington, DC, 1972.
- 74-B-1 Bates, R., *Preliminary Investigation of Temporal and Chromatic Methods of Marking Channels*, USCG Research and Development Center, Groton, CT, April 1974. (CG-D-96-74, CG R&DC 11/74).
- 76-A-1 Associated Controls & Communications, Inc., Operational Report of a Precise Navigation System Modified and Tested to Demonstrate Feasibility for Dredging, Channel Sweeping and Buoy Tending Operations, Lynn, MA, December 1976. (00288).
- 76-U-1 US Coast Guard, *Determination of Construction Tender Requirements*, Aids to Navigation Division (WAN-5), Washington, DC, 1976.
- 77-A-1 Armacost, R. L., Good Intentions about Long Rang Planning for Short Range Aids to Navigation, USCG Headquarters Aids to Navigation Division, Washington, DC, February 1977.
- 77-E-1 Engelhard Minerals and Chemicals Corporation, *Fuel Cell Batteries for Operation of Aids to Navigation*, Research and Development Center, Groton, CT, October 1977. (CG-D-83-77, CGR&DC 30/77).
- 77-G-1 Giovane, F., A Study of Aerial Semi- Precise Survey Systems for Position Auditing of Coast Guard Aids to Navigation, Research and Development Center, Groton, CT, October 1977. (CG-D-61-77, CGR&DC 25/77).
- 77-G-2 Giovane, F., A Feasibility Study of Aerial Imaging Techniques for Precise Aids to Navigation Position Determination, Research and Development Center, Groton, CT, December 1977. (CG-D-87-77, CGR&DC 33/77).
- 78-A-1 Armacost, R.L. Status of Aids to Navigation and Deep Draft Navigation Channels: Coast Guard--Corps of Engineers Interaction, presented at the Deep Draft Navigation Channel Design Conference, Waterways Experiment Station, Vicksburg, MS, May 18, 1978.
- 78-B-1 Bauman, F.S., Waelbrock, B.J., and Giovane, F., Feasibility Study on the Capability for Visually Auditing Buoy Positions using VTS Radar and/or Low Light Level Television, USCG Research and Development Center, Groton, CT, July 1978. (CG-D-45-78, CGR&DC 31/77, NTIS AD-A059755).

- 78-C-1 Clark, W.H., Stephenson, A.R., Bateson, R.H., Jones, J.E., Pohle, C.G., Kessler, K.M., and Sorenson, J., Study of the Performance of Aids to Navigation Systems--Phase I, Closed Loop Model of the Process of Navigation, Systems Control, Inc., Palo Alto, CA, March 1978. (CG-D-38-78, NTIS AD-A059891).
- 78-C-2 Couchman, R. L., An Overview of Alternative Techniques for Determining Positions at Sea, with Emphasis on Applicability of Potential Use for Positioning Buoys, Research and Development Center, Groton, CT, March 1978. (CG-D-20-78, CGR&DC 5/78, NTIS AD-A061997).
- 78-G-1 Grossetti, M., Prime, K., Campbell, M., and Moukawsher, E.J., *Buoy Reference Library*, Research and Development Center, Groton, CT, March 1978. (G-D-50-78, CGR&DC 6/78, NTIS AD-A076309).
- 79-B-1 Bertsche, W.R. and Cook, R.C., *Analysis of Visual Navigational Variables and Interactions*, Eclectech Associates, Inc., North Stonington, CT, October 1979.
- 79-D-1 Debok, D. H., and Walker, R. T., *Analysis of "Offstation" Buoys*, Research and Development Center, Groton, CT, May 1979. (CG-D-67-79, USCG R&DC 20/79, NTIS AD-A077278).
- 79-L-1 Lozano-Perez, T., and Wesley, M. A., An Algorithm for Planning Collision-Free Paths Among Polyhedral Obstacles, *Communications of the ACM*, Vol. 22, No. 10, 560-570, October 1979.
- 80-C-1 Cooper, R. B., and Marino, K. L., Simulator Evaluation of Electronic Radio Aids to Navigation Displays the Mini-experiment, Eclectech Associates, North Stonington, CT, September 1980. (CG-D-59-80, EA-80-U-88; NTIS AD-A107702).
- 80-M-1 Millbach, M. A., *Error Sensitivity Model Second Interim Report*, Research and Development Center, Groton, CT, April 1980. (CG-D-53-80, R&DC 8/80, NTIS AD-A089277).
- 81-C-1 Cook, R. C., Marino, K. L, and Cooper, R. B., *A Simulator Study of Deepwater Port Shiphandling and Navigation Problems in Poor Visibility*, Eclectech Associates, North Stonington, CT, January 1981. (CG-D-66-80, EA-80-U-099, NTIS AD-A100656-8).
- 81-C-2 Cooper, R. B., Marino, K. L., and Bertsche, W. R., *Simulator Evaluation of Electronic Radio Aids to Navigation Displays, the RA-1 Experiment*, Eclectech Associates, North Stonington, CT, January 1981. (CG-D-49-81, EA-80-U-086, NTIS AD-A106941).
- 81-C-3 Cooper, R. B., Marino, K. L., and Bertsche, W. R., Simulator Evaluation of Electronic Radio Aids to Navigation Displays, the RA-2 Experiment, Eclectech Associates, North Stonington, CT, April 1981. (CG-D-50-81, EA-81-U-009, NTIS AD-A1006672).

- 81-C-4 Cooper, R. B., and Bertsche, W. R., *An At-Sea Experiment for the Comparative Evaluation of Radar Piloting Techniques*, Eclectech Associates, North Stonington, CT, November 1981. (EA-81-U-066).
- 82-D-1 Drijfhout van Hooff, J. F., *Aids to Marine Navigation*, Volume II, Maritime Research Institute Netherlands, Report number R-238, June 1982.
- 83-M-1 Multer, J., and Smith, M.W., Aids to Navigation Turn Lights Principal Findings: Effect of Turn Lighting Characteristics, Buoy Arrangement, and Ship Size on Nighttime Piloting, Eclectech Associates, Inc., North Stonington, CT, February 1983 (CG-D-49-82, EA-82-U-054, NTIS AD-A126080).
- 83-M-2 Multer, J. and Smith, M. W., Aids to Navigation Radar I, Principal Findings: Performance in Limited Visibility of Short Range Aids with Passive Reflectors, Eclectech Associates, Inc., North Stonington, CT, December 1983. (CG-D-79-83, 83-U-143, NTIS AD-A137596).
- 83-R-1 Reik, J. R. and Hargis, S. C., Coastal Risk Management, *Proceedings of the 5th CAORF Symposium*, 1983, B2-1 B2-12.
- 83-S-1 Schryver, J. C., Evaluation of ARPA Display Modes and Traffic Assessment Through CAORF Simulation of Collision Avoidance Situations, CAORF, National Maritime Research Center, Kings Point, NY, October 1983. (CAORF 13-8128-02, DTMA 91-82-D-20004).
- 83-S-2 Smith, M. W., Multer, J, and Schroeder, K. R., Simulator Evaluation of Turn Lighting Effectiveness for Nighttime Piloting, *Proceedings of the 5th CAORF Symposium*, 1983, B3-1 B3-11.
- 83-U-1 US Coast Guard, Office of Navigation, Short Range Aids to Navigation Study, Washington, DC, June 1983.
- 84-M-1 Marino, K. L., Smith, M. W., and Moynehan J. D., Aids to Navigation SRA Supplemental Experiment Principal Findings: Performance of Short Range Aids under Varied Shiphandling Conditions, Eclectech Associates Division of Ship Analytics, Inc., North Stonington, CT, September 1984. (CG-D-03-84, 83-U-166, NTIS AD-A148366).
- 84-T-1 Thacker, J.R., *An Evaluation of Flashtube Signal Characteristics,* ,Research and Development Center, Groton, CT, August 1984. (CG-D-26-84, CGR&DC 13/84, NTIS AD-A149569).
- 85-H-1 Hwang, W., The Validation of a Navigator Model for Use in Computer Aided Channel Design, *Proceedings of the 6th CAORF Symposium*, 1985, A5-1 A5-17.
- 85-K-1 Kaufman, E. J., Optimizing the Use of Compressed Time Simulation as a Screening Device for Alternative Channel Layouts, *Proceedings of the 6th CAORF Symposium*, 1985, C1-1 C1-8.

- 85-M-1 Marino, K.L., Moynehan, J. D., and Smith, M.W., Aids to Navigation Principal Findings Report: Implementation as a Test of Draft Design Manual, Eclectech Associates Division of Ship Analytics, Inc., North Stonington CT, April 1985. (CG-D-04-85, 84-U-252, NTIS AD-A154428).
- 85-M-2 Moynehan, J. D., and Smith, M.W., *Aids to Navigation Systems and Meeting Traffic,* Eclectech Associates Division of Ship Analytics, Inc., North Stonington, CT, June 1985. (CG-D-19-85, 85-U-326 & 26-8403-02, NTIS AD-A157905).
- 85-O-1 O'Hara, J. M., and Brown, W. S., *An Investigation of the Relative Safety of Alternative Navigational System Designs for the New Sunshine Skyway Bridge: A CAORF Simulation*, Computer Aided Operations Research Facility (CAORF), September 1985. (CAORF 26-8232-04).
- 85-S-1 Schroeder, K. R., Smith, M. W., and Moynehan, J. D., Aids to Navigation System and Meeting Traffic, *Proceedings of the 6th CAORF Symposium*, May 1985, B8-1 B8-9.
- 86-G-1 Greenberg, L., Bresnick, T.A., Ulvila, J.W., Marvin, F.F., Clark, G.P., and Stanley, J.G., SRA Resource Management Final Report on Task 1: Measures of Effectiveness, Mandex, Inc., Springfield, VA, September 1986. (CG-D-20-86, NTIS AD-A 173705).
- 86-W-1 Winslow, T.S., and Mandler, M. B., *An Evaluation of the Hypothesis that Laser Light is More Conspicuous than Incandescent Light*, Research and Development Center, Groton, CT, May 1986. (CG-D-16-86, CGR&DC 8/86, NTIS AD-A170823).
- 87-C-1 Cline, A. K., and King, D. H., *Route Planning Model Design Report*, Pleasant Valley Software, Austin, TX, December 1987.
- 87-U-1 US Coast Guard, Short Range Aids to Navigation Division, *Evaluation of Impact in Advances in Buoy Technology on Replacement of WLB/WLM Capability*, Washington, DC, January 1987.
- 87-U-2 US Coast Guard, Systems Technology Division, *Evaluation of Impact of Advances in Buoy Technology on Replacement of WLB/WLM Capability*, Washington, DC, March 1987.
- 87-U-3 US Coast Guard, Short Range Aids to Navigation Division, Office of Navigation, Chief, *WLB Multi-Mission Utilization and Replacement of WLB Capability*, Washington, DC, June 1987.
- 87-U-4 US Coast Guard, Short Range Aids to Navigation Division, Signal Management Branch, *An Evaluation of Servicing and Discrepancy Policies for Short Range Aids to Navigation*, Washington, DC, June 1987.
- 87-W-1 Walker, R.T., Pritchett, C.W., Lincoln, W.B., and Stevens, M.J., *U.S. Coast Guard Buoy Tenders: Historical and Projected Usage*, USCG Research and Development Center, Groton, CT, June 1987. (CG-D-18-87, R&DC 12/87, NTIS AD-A183653).

- 87-Y-1 Young, R., Allen, S., Bitting, K., Kohler, C., Walker, R., Wyland, R., and Pietraszewski, D., Survey of Technology with Possible Applications to United States Coast Guard Buoy Tenders: Volume I--Technology Assessment, USCG Research and Development Center, Groton, CT, September 1987. (CG-D-06-88, R&DC 04/87, NTIS AD-A193918).
- 88-B-1 Brown, W. S., Smith, M. W., and Forstmeier, K. G., *Targets of Opportunity Experiment: Short Range Aids / Radio Aids Principal Findings: Waterway Performance Design and Evaluation Study*, Ship Analytics, Inc., North Stonington, CT, June 1988. (CG-D-3-87, 86-U-439, R&DC 15/88).
- 88-B-2 Brown, W. S., Smith, M. W., and Conway, J. A., *Positioning Experiment: Short Range Aids / Radio Aids Principal Findings: Waterway Performance Design and Evaluation Study,* Ship Analytics, Inc., North Stonington, CT, October 1988. (CG-D-09-89, 87-U-512, CGR&DC 4/88 NTIS AD-A210421).
- 88-C-1 Cline, A. K., and King, D. H., *Aids to Navigation Simulation Model: Route Planning Model*, Pleasant Valley Software, Austin, TX, June 1988.
- 88-K-1 Kingsley, L. C., Klesczewski, K. S., and Smith J. A., A Logistics Model of Coast Guard Buoy Tending Operations, *Proceedings of the Winter Simulation Conference*, Washington, DC, 1988.
- 88-P-1 Pietraszewski, D., Spalding, J., Viehweg, C, and Luft, L., U.S. Coast Guard Differential GPS Navigation Field Test Findings, *Navigation: Journal of the Institute of Navigation*, Vol. 31, No. 1, 55-72, 1988.
- 88-U-1 US Coast Guard, Office of Navigation Safety and Waterway Services, Chief, WLB/WLM Replacement Sponsor's Requirements Documents, Washington, DC. November 1988.
- 89-G-1 Gynther, J. W. and Smith, M. W., Radio Aids to Navigation Requirements: the 1988 Simulator Experiment, U.S. Coast Guard Research and Development Center, Groton, CT, November, 1989. (CG-D-08-90, NTIS AD-A226235)
- 89-T-1 Thacker, J.R., Final Report on United States Coast Guard Aids to Navigation Servicing Trial Contracts, Draft Report, USCG Headquarters, Washington, DC, October 1989.
- 90-D-1 Daidola, J. C., Basar, N. S., Johnson, F. M., and Walker, R. T., *Buoy Technology Survey USCG Buoy Development Review*, M. Rosenblatt & Son Inc., New York, NY, October 1990. (CG-D-04-92, R & D C 10/90, NTIS AD-A247183).
- 90-K-1 Kingsley, L. C., Klesczewski, K. S., and Smith J. A., Comparing US Coast Guard Buoy Tender Performance Using Simulation, Research and Development Center, Groton, CT, June 1990. (Draft report).

- 90-K-2 Krammes, S., and Crowell, R., *Demonstration of the Differential Global Positions System (DGPS) for Buoy Positioning*, United States Coast Guard Research and Development Center, October 1990.
- 90-L-1 Laxar, K., Luria, S. M. and Mandler, M. B., *A Comparison of Parallax and Single-Station Range Aids to Navigation: Final Report*, Naval Submarine Medical Research Laboratory, December 1990.
- 90-M-1 Mandler, M. B., and Smith M. W., Precision Electronic Navigation in Restricted Waterways, *Proceedings of the 46th Conference of the Institute of Navigation*, Atlantic City, NJ, June 1990.
- 90-R-1 Rosenblatt & Son, Inc., Users Manual for the Buoy Technology Information System (BTIS), August 1990.
- 90-S-1 Smith, M.W., Mazurkiewicz, J., and Brown, W.K., *The Effect of Ship Inherent Controllability on Piloted Performance: The Simulator Experiment*, Ship Analytics, Inc., North Stonington, CT, October 1990. (CG-D-10-90, R&DC 16/90, NTIS AD-A228968).
- 90-T-1 Tung, F.F.C., Skaliotis, G.J., Goeddel, D., Flahive, D., and Cook, R., Evaluation of Contracting the Servicing of Short Range Aids to Navigation, Transportation Systems Center, Cambridge, MA, August 1990.
- 90-W-1 Wroblewski, M. R., and Mandler, M. B., *Detecting Buoy Lights: Effects of Motion and Lantern Divergence*, Research and Development Center, Groton, CT, March 1990 (CG-D-07-90, R&DC 05/90, NTIS AD-A225937).
- 91-D-1 Daidola, J. C., Basar, N. S., Reyling, C.J., and Walker, R. T., *Buoy Technology Survey Recommendations for Development of Buoy Technologies*, M. Rosenblatt & Son Inc., New York, NY, June 1991. (CG-D-06-92, R & D C 17/91).
- 91-D-2 Darby-Dowman, K., and Mitra, G., Buoy Tendering Inspection Timestamps A Prototype Model, Brunel University, United Kingdom, September 1991.
- 91-M-1 Mazurkiewicz, J. and Smith, M.W., *The Effect of Ship Inherent Controllability on Piloted Performance: Evaluation and Prediction*, Interim Report, USCG Research and Development Center, Groton, CT, September 1991. (CG-D-10-93, R&DC 21/90).
- 91-S-1 Spalding, J., Krammes, S., and Pietraszewski, D., Status of Prototype USCG DGPS Broadcasts from the Montauk Point, New York Radiobeacon, US Coast Guard Research and Development Center, Groton, CT, March 1991.
- 91-V-1 Volpe National Transportation Systems Center, *Port Needs Study (Vessel Traffic Services Benefits) Study Overview*, Cambridge, MA, August 1991.
- 92-B-1 Brown, K. and Schwenk, J., *Aids to Navigation Service Force Mix 2000 Project: Project Overview*, John A. Volpe National Transportation Systems Center, Cambridge, MA, July 1992. (DOT-VNTSC-CG-92-2, DOT-CG-N-01-92-1.1).

- 92-B-2 Brown, K., Schwenk, J., Bucciarelli, M, and Jacobs, M., Aids to Navigation Service Force Mix 2000 Project: Volume I Development and Application of an Aids to Navigation Service Force Mix Decision Support System Final Report, John A. Volpe National Transportation Systems Center, Cambridge, MA, July 1992. (DOT-VNTSC-CG-92-2.I, DOT-CG-N-01-92-1.2).
- 92-B-3 Brown, K., Schwenk, J., and Bucciarelli, M, Aids to Navigation Service Force Mix 2000 Project: Volume II Development and Application of an Aids to Navigation Service Force Mix Decision Support System Aid Assignments and Vessel Summary Reports, John A. Volpe National Transportation Systems Center, Cambridge, MA, June 1992. (DOT-VNTSC-CG-92-2.II, DOT-CG-N-01-92-1.3).
- 92-C-1 Cline, A. K., King, D. H., and Meyering, J. M., Routing and Scheduling Coast Guard Buoy Tenders, *Interfaces*, Vol. 22, May-June, 56-72, 1992.
- 92-G-1 Grabowski, M. and Sanborn, S., Knowledge-Representation and Reasoning in a Real-Time Operational Control System: The Shipboard Piloting Expert System (SPES), *Decision Sciences*, Vol. 23, No. 6, 1277-1296, 1992.
- 92-I-1 Ihnat, D., Aids to Navigation Service Force Mix 2000 Project: Volume III Analysis of Multi-Mission Requirements and Development of Planning Factors for the Replacement Buoy Tender Fleet, Short Range Aids to Navigation Division, USCG Office of Navigation Safety and Waterway Services, Washington, DC, June 1992. (DOT-VNTSC-CG-92-2.III, DOT-CG-N-01-92-1.4).
- 92-M-1 MacRae, B.D., Stephenson, R., Leadholm, T., and Gonin, I., *Digital Chart Database Conversion into a System Electronic Navigational Chart*, USCG Research and Development Center, Groton, CT, March 1992. (CG-D-15-92, R&DC 04/92).
- 92-S-1 Smith, M.W., *Waterway Design Manual*, USCG Research and Development Center, Groton, CT, September 1992. (CG-D-18-92, R&DC 01/92, NTIS AD-A257030).
- 92-S-2 Smith, M. W., and Mandler, M. B., Human Factors Evaluations of Electronic Navigation Systems, *Proceedings of the First Annual Conference and Exposition for Electronic Chart Display and Information Systems: ECDIS '92*, Baltimore, MD, February 1992, 113-122.
- 92-S-3 Stewart, R. D., and Alexander, L., Evaluation of Remote Vessel Tracking and Control: Preliminary Trials, presented at the 1992 RTCM Annual Assembly Meeting, Bal Harbor, FL, 1992.
- 92-U-1 US Coast Guard, Office of Navigation Safety and Waterway Services, Chief, Aids to Navigation Service Force Mix, Washington, DC, February 1992.

- 93-A-1 Alexander L., and Spalding, J. W., *Integrated Marine Navigation Systems of the Future*, presented at the Institute of Navigation National Technical Meeting, San Francisco, CA, January 1993.
- 93-B-1 Brown, K., Analysis of USCG Replacement Stern-Loading Buoy Boat Requirements for the Aids to Navigation Mission, John A. Volpe National Transportation Systems Center, Cambridge, MA, August, 1993. (DOT-VNTSC-CG-569-TM-5).
- 93-B-2 Brown, K., Blythe, K., Schwenk J., and West, M., *Overview of the US Coast Guard Short Range Aids to Navigation Mission*, John A. Volpe National Transportation Systems Center, Cambridge, MA, 1993. (DOT-VNTSC-CG-93-2, DOT-CG-N-02-93).
- 93-G-1 Grabowski, M. and Wallace, W., An Expert System for Maritime Pilots: Its Design and Assessment using Gaming, *Management Science*, Vol. 39, No. 12, 1506-1520, 1993.
- 93-L-1 Lee, J.D. and Sanquist, T.F., *Human Factors Plan for Maritime Safety:*Annotated Bibliography, Battelle Human Affairs Research Centers, Seattle, WA, February 1993. (CG-D-08-93, R&DC 05/93, NTIS AD-A265392)
- 93-M-1 Murphy, J. M., *Buoy Maintenance Study Part I*, USCG Maintenance and Logistics Command, Atlantic, September 1993.
- 93-P-1 Polant, R.M., The Coast Guard--in the 21st Century, *The Bulletin*, USCG Academy Alumni Association, New London, CT, February 1993.
- 93-S-1 Spalding, J. W., Flynn, S., and van Diggelen, F., Servicing and Positioning Aids-to-Navigation with DGPS, Institute of Navigation GPS '93 Conference, Salt Lake City, UT, 1993.
- 94-B-1 Brown, K., Bucciarelli, M., and Leo, F., *Analysis of Fleet Size and Private Sector Cost Comparisons for the USCG Inland Construction Tender Fleet*, John A. Volpe National Transportation Systems Center, Cambridge, MA, May 1994. (DOT-VNTSC-CG-94-4, DOT-CG-N-01-94)
- 94-F-1 Fremont-Smith, R., Study of Feasibility of Changing Minor Lights, Buoy and Daybeacon Servicing Intervals, Short Range Aids to Navigation Division, USCG Headquarters, Washington, DC, June 1994.
- 94-F-2 Fremont-Smith, R., *United States Coast Guard Ocean Buoy Recapitalization Study*, Short Range Aids to Navigation Division, USCG Headquarters, Washington, DC, September 1994.
- 94-M-1 McLeish, D. B., and Alexander, L., *Buoy Tending with ECDIS: The Future is Now*, presented at the XIIIth IALA Conference, Honolulu, HI, February 1994.
- 94-S-1 Sanquist, T.F., Lee, J.D. and Rothblum, A.M., Cognitive Analysis of Navigation Tasks: A Tool for Training Assessment and Equipment Design, Battelle Human

- Affairs Research Centers, Seattle, WA, April 1994. (CG-D-19-94, R&DC 12/94, NTIS AD-A284392).
- 94-S-2 Smith, M. W., Akerstrom-Hoffman, R., Pizzariello, C. M, Siegel, S. I., and Gonin, I. M., Mariner's Use of Automated Navigation Systems, *Transportation Research Record* 1464, 1994.
- 94-S-3 Spalding, J. W., Flynn, S., Milne, W. and van Diggelen, F., Interim Report on Servicing and Positioning Aids-to-Navigation with DGPS Incorporating Receiver Autonomous Integrity Monitoring, United States Coast Guard Research and Development Center, April 1994.
- 94-U-1 US Coast Guard, Office of Engineering, Logistics and Development, and Office of Navigation Safety and Waterway Services, *Base/Support Center Industrial Support Roles Focus Group*, Washington, DC, 18 March 1994.
- 94-U-2 US Coast Guard, Short Range Aids to Navigation Division, Fleet Development Team, Short Range Aids to Navigation Mission Analysis SRAMA, Washington, DC, April 1994.
- 95-B-1 Brown, K., Corey, J., and Blythe, K., *Waterways Management Research and Planning Baseline Analyses: Waterways Management*, Volpe National Transportation Systems Center, Cambridge, MA, April 1995. [DRAFT REPORT] (DOT-VNTSC-CG-95-1).
- 95-B-2 Bucciarelli, M. and Brown, K., A Desktop-OR Success: Modeling Coast Guard Buoy Tender Operations, *Interfaces*, Vol. 25, No. 4, 1-11, July-August 1995.
- 95-C-1 Casey, L., Watros, G., and Hall, T., *Waterways Management Research and Planning Baseline Analyses: Navigational Risk Assessment*, Volpe National Transportation Systems Center, Cambridge, MA, April 1995. [DRAFT REPORT] (DOT-VNTSC-CG-95-3).
- 95-E-1 Ecker, W. J. and Alexander, L., The Impact of Emerging Technologies on Waterway Safety and Management, *The Bulletin*, USCG Academy, New London, CT, 27-31, August 1995. (Reprinted from *Sea Technology*, March 1995)
- 95-G-1 Grabowski, M. and Sanborn, S., Shipboard Evaluation of the Shipboard Piloting Expert System (SPES), US Coast Guard Research and Development Center, Groton, CT, July 1995.
- 95-G-2 Grabowski, M. and Sanborn, S., Integration and Preliminary Shipboard Observations of an Embedded Piloting Expert System, *Marine Technology*, Vol. 32, No. 3, 216-223, July 1995.
- 95-L-1 LaMance, J., Spalding J. W., and Brown, A., *Boosting Shipboard RAIM Availability*, presented at ION Fall Meeting, Palm Springs, CA, September 1995.

- 95-L-2 Lunday, M. T., Spalding, J. W., and Dowd, M., *Verification of USCG DGPS Broadcast Parameters*, presented at the Institute of Navigation GPS '95 Conference, Palm Springs, CA, September 1995.
- 95-M-1 Murphy, J. M., *Buoy Maintenance Study Part II*, USCG Maintenance and Logistics Command, Atlantic, February 1995.
- 95-M-2 Maio, D., Nabrynski, J., and Long, D., *Waterways Management Research and Planning Baseline Analyses: Waterways Users*, Volpe National Transportation Systems Center, Cambridge, MA, April, 1995. [DRAFT REPORT] (DOT-VNTSC-CG-95-2).
- 95-M-3 Maio, D. and Watros, G., *Waterways Management Research and Planning Baseline Analyses: Project Overview*, Volpe National Transportation Systems Center, Cambridge, MA, April 1995. [DRAFT REPORT] (DOT-VNTSC-CG-95-5).
- 95-S-1 Smith, M. W., Akerstrom-Hoffman, R., Pizzariello, C. M, Siegel, S. I., Schreiber, T. E., and Gonin, I. M., *Human Factors Evaluation of Electronic Chart Display and Information Systems (ECDIS)*, Department of Transportation, United States Coast Guard Research and Development Center, February 1995. (CG-D-12-95, R&DC 10/93, MSI/CAORF 26-9038-01A, NTIS AD-A295524).
- 95-S-2 Spalding, J. W., and van Diggelen, F., *Positioning United Sates Aids-to-Navigation Around the World*, presented at the Institute of Navigation GPS '95 Conference, Palm Springs, CA, September 1995.
- 95-U-1 US Coast Guard, Waterway Analysis and Management System Completion Guide, Washington, DC, January 1995.
- 95-W-1 Winkeller, R., Watros, G., and Weber, A., *Waterways Management Research and Planning Baseline Analyses: Management Systems Effectiveness and Benefits Estimating*, Volpe National Transportation Systems Center, Cambridge, MA, April 1995. [DRAFT REPORT] (DOT-VNTSC-CG-95-4).
- 96-B-1 Brown, G. G., Dell, R. F., and Farmer, R. A., Scheduling Coast Guard District Cutters, *Interfaces*, Vol. 26, No. 2, 59-72, March-April, 1996.
- 96-G-1 Grabowski, M. and Georg, J. C., Integrated Bridge Systems Performance, Expert Systems and Human Performance, *Proceedings of the Public Forum on Integrated Bridge Systems*, National Transportation Safety Board, Tysons Corner, VA, March 1996.
- 96-G-2 Gonin, I., Dowd, M. K., and Alexander, L., *Electronic Chart Display and Information System (ECDIS) Test and Evaluation, Summary Report*, United States Coast Guard Research and Development Center, December 1996. (CG-D-20-97, R&DC 39/96, NTIS AD-A329592).
- 96-H-1 Heerlein, W., *A Catalog of Information Resources from a Waterways Management Perspective*, U.S. Coast Guard Research and Development Center. March 1996.

- 96-N-1 National Research Council, Vessel Navigation and Traffic Services for Safe and Efficient Ports and Waterways, Interim Report, Marine Board, NRC, Washington, DC, 1996.
- 96-S-1 Spalding, J. W., Lunday, M. T., and Dowd, M. K., *Differential Beacon Receiver Testing*, United States Coast Guard Research and Development Center, June 1996. (CG-D-24-96, R&DC 18/96, NTIS AD-A317835).
- 96-S-2 Spalding, J. W., and Crowell, R. D., *Performance Test Results of DGPS and DPS Testing on USCGC Juniper (WLB-201)*, United States Coast Guard Research and Development Center, September 1996.
- 96-V-1 Volpe National Transportation Systems Center, *Waterways Evaluation Tool Functional Requirements*, Initial Draft, Cambridge, MA, March 15, 1996.
- 96-V-2 Volpe National Transportation Systems Center, Waterways User Groups Characterized According to the Navigational Requirements of the Vessel Operators, Final Report, Cambridge, MA, August 1996.
- 97-C-1 Creamer, P. M., Cho, D. L., Morris, P. B., and Pisano, J. J., *Differential GPS Mission Needs Analysis: Harbor Entry and Approach*, TASC, Reading, MA, November 1997. (TIM-08605-1).
- 97-G-1 Gonin, I., and Crowell, R., *Assessing Electronic Chart Systems*, United States Coast Guard Research and Development Center, March 1997.
- 97-S-1 Spalding, J. W., and Alexander, L., *United States Coast Guard Integrated Ice Navigation System Research*, United States Coast Guard Research and Development Center, January 1997.
- 97-S-2 Spalding, J. W., and Crowell, R. D., *Performance Test Results of DGPS and DPS Testing on USCGC IDA LEWIS (WLM-551)*, United States Coast Guard Research and Development Center, July 1997.
- 97-U-1 US Department of Transportation/Department of Defense, 1996 Federal Radionavigation Plan, Washington, DC, July 1997.
- 97-U-2 US General Accounting Office, Coast Guard Challenges for Addressing Budget Constraints, GAO/RCED-97-110, Washington, DC, May 1997.
- 98-R-1 Ryan, S., Petovello, M., and Lachapelle, G., Augmentation of GPS for Ship Navigation in Constricted Water Ways, *Proceedings of ION NTM 98*, Long Beach, CA, January 1998.